# **New Jersey Department of Environmental Protection Fish and Wildlife**

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# New Jersey Bald Eagle Project, 2022

Prepared by Larissa Smith and Kathleen E. Clark

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Cover photo: Bald eagles on the winter marsh in Ocean County, NJ.
Photo by Rich Nicol.

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# **Summary**

New Jersey Fish and Wildlife's Endangered and Nongame Species Program (ENSP) biologists, Conserve Wildlife Foundation (CWF) staff, and volunteer observers located and monitored bald eagle nests and territories. Two hundred sixty-seven nest sites were monitored during the nesting season, of which 250 were documented to be active (with eggs) and 17 were territorial or housekeeping pairs. Twenty-nine new eagle pairs were found this season, 14 in the south, ten in central, and five in the north. One hundred-ninety-seven nests (83%) of the 236 known-outcome nests produced 335 young, for a productivity rate of 1.42 young per active/known-outcome nest. Sixteen percent (39 nests) failed to produce young. The Delaware Bay region remained the state's eagle stronghold, with roughly half of all nests located in Cumberland and Salem counties and the bayside of Cape May County.

The state's eagle population would not be thriving without the efforts of the dedicated eagle project cooperators and volunteers who observe nests, report sightings, and help protect critical habitat.

### **Introduction**

The records to document the abundance and distribution of eagle nests in New Jersey do not exist. In the 1930s-1950s, when local naturalists and birders began documenting bird activity, bald eagles had already been subject to persecution for decades because of their perceived predatory relationship to game and farm animals. One study supported by NJDFW in southern NJ indicated more than 20 pairs of nesting bald eagles in the Delaware Bay region of NJ in the 1950s (Holstrom 1985). As a result of the use of the pesticide dichloro-diphenyl-trichloroethane, commonly known as DDT, the number of nesting pairs of bald eagles in the state declined to only one by 1970 and remained there into the early 1980s. Use of DDT was banned in the United States in 1972. That ban, combined with restoration and management efforts by Fish and Wildlife's Endangered and Nongame Species Program (ENSP), resulted in population increases to 23 pairs by 2000, 48 pairs by 2005, 82 pairs by 2010, 150 pairs by 2015, and 220 by 2020. ENSP recovery efforts — implemented since the early 1980's — have resulted in a steady recovery as New Jersey's eagle population has rebounded from the edge of extirpation.

Recovery efforts were multifaceted. In 1982, after New Jersey's only remaining nest (located in Cumberland County's Bear Swamp) had failed at least six consecutive years, ENSP biologists removed the egg for artificial incubation at Patuxent Wildlife Research Center in Maryland, and after hatching, fostered the young nestling back to the nest. As a result of residual DDT contamination, the Bear Swamp eggs were too thin to withstand normal incubation. Artificial incubation and fostering chicks continued with success until 1989, when a new, younger female took over and the pair was able to hatch their own eggs.

Increasing the production from a single nest, however, was not enough to boost the state's population in a reasonable period of time. Mortality rates are high in young eagles (as high as 80%), and eagles do not reproduce until about five years of age. ENSP instituted a hacking project in 1983 that resulted in the release of 60 young eagles from Canada over an eight-year period (Niles et al. 1991). These eagles contributed to the increase in nesting pairs observed after 1990.

Bald eagles face many threats, with disturbance and habitat loss the greatest threats in our state. In addition, contaminants in the food web may negatively affect the eagles nesting in some areas of NJ.

Disturbance is defined as any human activity that causes eagles to change their normal behavior, and takes many forms, including mere presence of people in nesting or foraging areas. In general, people on foot evoke the strongest negative reaction (Buehler 2000). When eagles change their behavior in reaction to people, they cease doing what is best for their survival and the well-being of their eggs and young. Ultimately, that can reduce the survival of individuals and the population. ENSP biologists work to manage and reduce disturbance in eagle nest areas. A team of experienced volunteer observers, as well as education and safe viewing areas, are essential to this effort. Viewing eagles from safe distances, where eagles continue to act normally, is best for eagles and satisfies people's natural desire to see them. Biologists also protect habitat in a variety of ways, including working with landowners, identifying land for acquisition and management, and applying the state's land use regulations. ENSP has a history of investigating the impacts of organochlorines and heavy metals in eagles and other raptors nesting in the Delaware Bay region. Bald eagles, ospreys, and peregrine falcons nesting in the region have exhibited some reproductive impairment relative to other areas (Steidl et al. 1991, Clark et al. 1998), but more recent research indicates problems may be limited to very local areas of contamination (Clark et al. 2001). ENSP biologists collect samples that allow monitoring of contaminants in eagles during the nesting season, and monitoring nest success is an integral part of this research.

ENSP biologists, with the Division's Bureau of Law Enforcement staff and project volunteers, work year round to protect bald eagle nest sites. The competition for space in the most densely populated state in the nation makes it clear that critical habitat needs to be identified and, where possible, protected, to support a recovered bald eagle population. Critical habitat for eagles includes areas used for foraging, roosting and nesting, and is included in the program's Landscape Project mapping of critical wildlife habitats. Landscape Project mapping identifies suitable habitat that is associated with nests, foraging areas, and documented communal roosts.

The population of wintering bald eagles has grown along with the nesting population, especially in the last ten years. The NJ Eagle Project discontinued participation in the national Mid-winter eagle survey, but has conducted surveys to document important roosting areas in winter and year-round.

The federal government removed the bald eagle from its list of Endangered Species in August, 2007, in recognition of the national resurgence in the eagle population in the lower 48 states. The U.S. Fish and Wildlife Service oversees a 20-year monitoring period (through 2027) to watch for and investigate any problems that could compromise the eagle recovery. In addition, the Bald and Golden Eagle Protection Act remains in effect to protect nest and roost sites for bald eagles

nationwide. The bald eagle's official New Jersey status currently remains state-endangered for the breeding season and state-threatened for the non-breeding season, and state regulatory protection was unchanged by the federal action.

Objectives of the New Jersey bald eagle program:

- 1) monitor the recovery of the bald eagle in the state by documenting the status, distribution, and productivity of breeding bald eagles in NJ;
- 2) enhance nest success by protecting bald eagles and their nest sites;
- 3) monitor wintering areas and other concentration areas and plan for their protection;
- 4) document location data in the Biotics database and apply it to identify critical habitat using the Landscape Project mapping following mapping protocols;
- 5) provide information and guidance to landowners and managers with regard to bald eagles on their properties;
- 6) increase our understanding of bald eagle natural history in New Jersey as eagle repopulate habitats.

#### **Methods**

#### **Nest Survey**

All known nest sites are monitored January through July or through fledging. Volunteer nest monitors watch most nests from a distance of 1,000 feet, using binoculars and spotting scopes, for periods of two or more hours each week. Observers record all data including number of birds, courtship or nesting behaviors, incubation, feeding, and other parental care behaviors that provide essential information on nesting status. CWF staff contact volunteers weekly with an update and are available to discuss observer questions and data. Dates are recorded for incubation, hatching, banding, fledging, and, if applicable, nest failure. A nesting territory is considered "occupied" if a pair of eagles is observed in association with the nest and there is some evidence of recent nest maintenance. Nests are considered "active" if a bird is observed in an incubating position or if eggs or young are detected in the nest.

Observers report other bald eagle sightings to ENSP or CWF biologists, who review the information for clues to potential new nest locations. ENSP staff and volunteers investigate territorial bald eagles for possible nests through field observations. When evidence suggests a probable location, biologists may conduct ground or aerial surveys of the region to locate a nest. Following guidance from the US Fish and Wildlife Service's post-delisting monitoring plan (USFWS 2009), we maintain a list of occupied nests and territories for population monitoring. The list approach also supports the NJDEP's Land Resource Protection activities.

When necessary, nests are protected from disturbance with barriers or posted signs. Staff works in partnership with landowners and land managers to cooperatively protect nests. Nest monitors notify ENSP staff immediately if any unusual or threatening activities are seen around the nest site. The Division's Bureau of Law Enforcement conservation officers act to enforce protection measures as needed, and provide routine assistance as well.

At select sites, ENSP biologists enter the nest site to band young when nestlings are between five and eight weeks old. A biologist climbs the tree and places nestlings into a large duffel bag and lowers them, one at a time, to the ground. A team records measurements (bill depth and length, eighth primary length, tarsal width, and weight) and bands each eaglet with a federal band and a green state color band with an alpha-numeric code. A veterinarian examines each bird and takes a blood sample for analysis. Blood is collected and stored following techniques in Bowerman et al. (1994). Samples are stored frozen pending analysis by a technical lab. Nest trees are generally not climbed the first season to avoid associating disturbance with the new site.

#### Winter and Roost Surveys

In recent years, we in New Jersey did not participate in the National Mid-Winter Eagle survey held in January, finding that the standardized count no longer covered all important eagle areas. We have increased the efforts to document locations where eagles roost and otherwise concentrate in the winter months of January and February.

#### Results

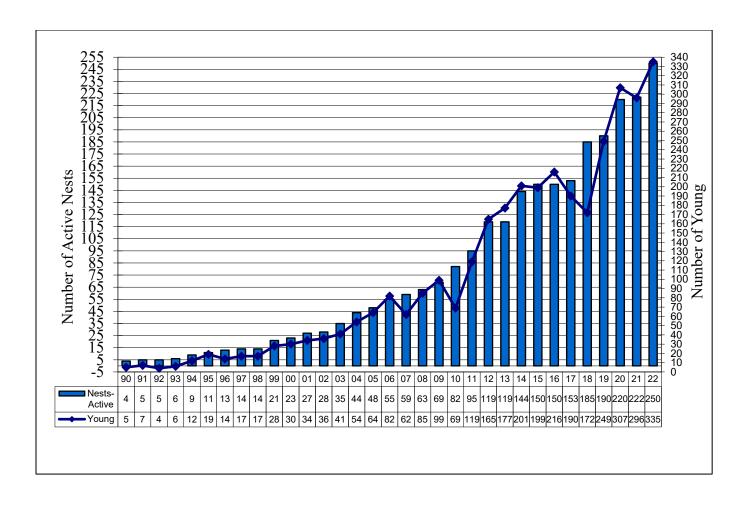
#### **Nest Survey**

The statewide population rose to 267 territorial pairs in 2022, an increase of 20 from last year. We documented 250 pairs that were known active (meaning they laid eggs), an increase of 28 nests from 2021 (Figure 1); 17 pairs maintained nest territories but did not lay eggs. Eighty-three percent of nests, 197, were known to be successful in producing 335 young. The productivity rate for 236 known-outcome nests was 1.42 young per active nest, which is above the range of 0.9 to 1.1 young per nest for population maintenance. Sixteen percent of nests (39) nests failed to fledge young. We documented nest failures and brood loss that occurred: 369 chicks were reported in the nestling stage but only 335 were documented at fledging. The number of nestlings lost could be higher as monitors often cannot see the number of chicks in the first weeks after hatching.

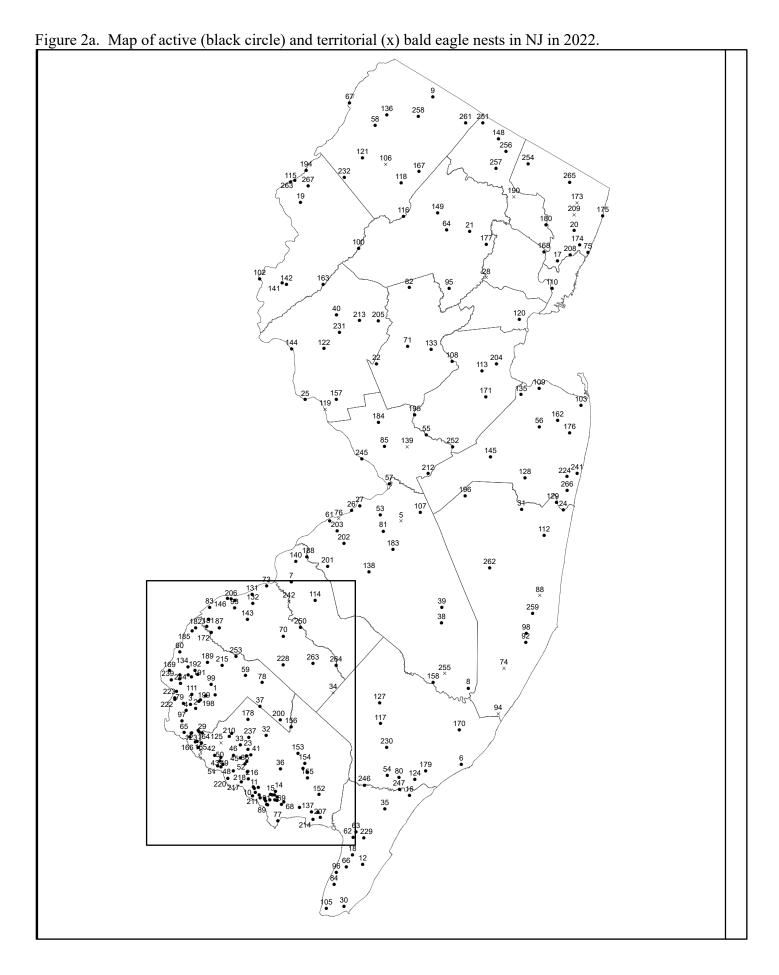
Most nests were located in the southern portion of the state, particularly within 20 km of Delaware River and Bay (Figure 2). The majority of nests were located on private land, while the rest were on state, federal, county, and conservation-dedicated lands. Disturbance was an issue at many nests; posting and regular surveillance by staff and nest monitors remained essential to increase the chance of success.

All documented nests and significant dates of the nesting season are listed in Table 1. Excluded from the nest table were 64 previously documented nest sites that were unoccupied and where no new nest could be found, or search effort was lacking (Table 2).

Figure 1. Number of bald eagle nests and young fledged in New Jersey, 1990–2022. Blue bars=number of nests, and blue lines=number of young produced each year. In 2022, 250 pairs were active and 335 young were produced.

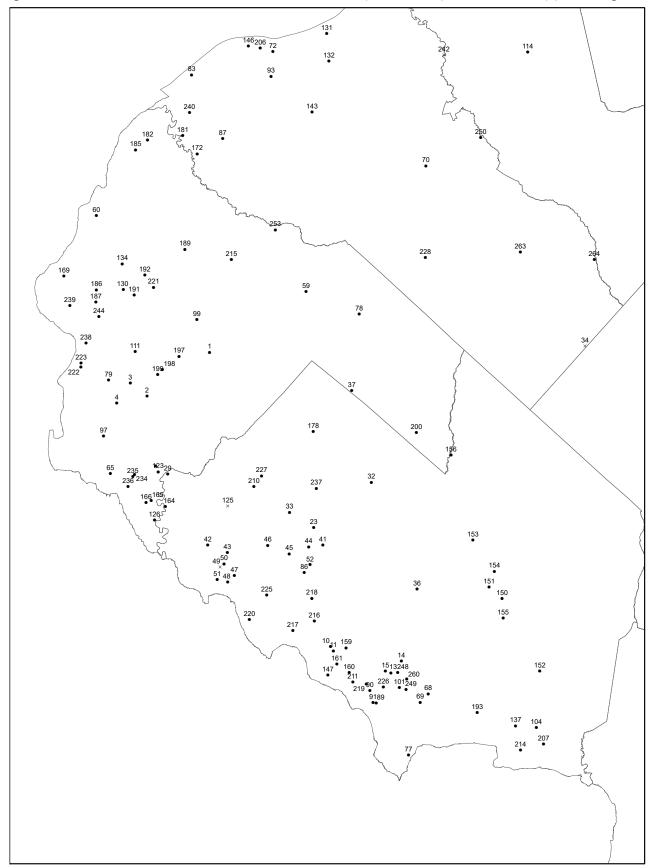


#	Nest Name	#	Nest Name	#	Nest Name	#	Nest Name	#	Nest Name
	Alloway Lake		Cranbury Neck		Keansburg		New Hampton		Sayres Neck B
	Alloways Creek C		Cross Farm				Newport Meadows B		Sayres Neck C
	Alloways Creek E		Crosswicks Creek		Kearny Keasbeys Creek		Newport Meadows C		School House
	Alloways Creek F				Kettle Creek		Newport Meadows C		Seabreeze B
	Assiscunk Cr		Culvers Gap Daretown		Kin-Buc/Edison		Newton Reservoir		
					Kirkwood Lake				Seabrook SFE Tower
	Atlantic City Audubon		Deepwater-2				Nutley		SFE Tower B
	Ballanger Creek West		Delanco		Labar		Oberlin		
			Dennis Creek-1		Lake Hopatcong B		Oceanville		Shark River
	Bassetts Bridge Wallkill		Dennis Creek-2		Lake Lenape		Old Bridge		Sheep Pen Creek
	Bay Point Road A		Denville		Lake Mohawk		Oldman's Creek		Sheepkill Pond
	Bay Point Road B		Devil's Gut		Lambertville Tower		Oradell Reservoir		Shiloh Tower
	Bayberry		Dias Creek East		Linden		Overpeck Creek		Silver Lake
	Beaver Dam		Dingman's Ferry		Little Swartswood		Palisades B		South Dennis
	Beaver Dam N		Dividing Creek A		Lockatong		Parker's Creek		South River-Atlantic
	Beaver Dam W		Dividing Creek B		Long Bridge		Parsippany		Stanton Station
	Beesley Pt		Duffield Run		Lower Patcong		Parsonage Run		Stillwater
	Berrys Creek		Duke-Raritan River		Maca Road		Patcong Creek B		Stow Creek A (North
- 0	Bidwell Creek		DuPont/Raccoon Creek		Mad Horse Creek		Paterson		Stow Creek E
	Blairstown		Eagle Point-B		Makepeace Lk	- 0 -	Pedricktown		Stow Creek F
	Bogota		Eagleswood		Manasquan Res		Pedricktown Cell		Stow Creek G
21	Boonton		Edgewater	129	Manasquan River	183	Pemberton		Sunset
22	Branchburg	76	Edgewater Park	130	Mannington C		Pennington		Supawna Meadows A
	Bridgeton	77	Egg Island	131	Mantua Creek A	185	Penns Grove	239	Supawna Meadows E
24	Brielle	78	Elmer	132	Mantua Creek B	186	Penns Neck A	240	Swedesboro-Birch Cr
25	Bull's Island	79	Elsinboro	133	Manville	187	Penns Neck B	241	Sylvan Lake Twr
26	Burlington Island	80	English Creek	134	Marshalltown	188	Pennsauken CC	242	Timber Creek
27	Bustleton Cr	81	Fairgrounds	135	Matawan Cell	189	Pilesgrove	244	Toll Bridge
28	Canoe Brook	82	Far Hills-Ravine Lake	136	Mattison Res	190	Point View Reservoir	245	Trenton
29	Canton Drain	83	Ferry Rd	137	Matts Landing 2	191	Pointers-Auburn Rd	246	Tuckahoe A
30	Cape May Bennett Cr	84	Fishing Creek	138	Medford	192	Pointers-Auburn Rd B	247	Tuckahoe B
	Carasaljo		Five Mile Run	139	Mercer Oaks	193	Port Norris	248	Turkey Pt A
32	Carmel	86	Flat Top	140	Merchantville	194	Poxono Island	249	Turkey Pt B
33	Cedar Hill		Foampak	141	Merrill Creek	195	Princeton	250	Turnersville
34	Cedar Lake (Gloucester)		Forked River	142	Merrill Creek 2		Prospertown		Upper Greenwood
	Cedar Swamp Creek		Fortescue A		Mickleton		Quinton		Upper Millstone
	Cedarville CT		Fortescue C		Milford Tower		Quinton B		Upper Oldmans
	Centerton		Fortescue D	145	Millhurst		Quinton C		Upper Ramapo
	Chatsworth		Fresh Creek		Mond's Island		Rainbow Lake		Wading River
	Chatsworth-2		Gibbstown		Money Island		Ramblewood		Wanaque A
	Clinton		Great Bay Blvd.		Monksville		Rancocas-B Cell		Wanaque B
	Cohansey CC A		Great Swamp		Mount Hope Lake		Rancocas Creek A		Wantage
	Cohansey Greenwich A)		Green Cr West		MR-Burcham		Raritan Keasbey		Waretown
	Cohansey Greenwich B)		Grossup Tower		MR-C-Bluffs		Readington		Warfle
	Cohansey Hopewell East)		Gunning River		MR-Dorchester		Repauno		Wawayanda
	Cohansey Hopewell West		Hackett		MR-Millville No		Riggins		
									Whiting
	Cohansey MidMarch A		Hackettstown		MR-Peek Preserve		River Barge Park		Tocks Island
	Cohansey MidMarsh A		Hack Site		MR-Somes Drive		River Edge		Williamstown
	Cohansey MidMarsh C		Harmony River		MR Muddy Run		Roadstown		Winslow
	Cohansey MidMarsh D		Hartshorne Woods Park		Mt Airy		Robbins Lane		Woodcliff Lake
	Cohansey MidMarsh E		Heislerville		Mullica River		Robbinsville		Wreck Pond
	Cohansey Ragged Island)		Higbee		Nantuxent Creek A		Round Valley	267	Yards Creek
	Cohansey Tindalls Landi Columbus Twr		Hyper Humus		Nantuxent Creek B Nantuxent Creek D		Sadie Lane		
			Jacobstown	1 ( 1		015	Salem River		



New Jersey Bald Eagle Project Report, 2022

Figure 2b. Inset area of southwestern counties of active (black circle) and territorial (x) bald eagle nests.



**Table 1. Production and estimated dates for bald eagle nests in NJ, 2022.** Some dates are unknown and left blank; others may be estimates or first-observed dates. T=Territorial.

NEST SITE	Incubation	Hatching	Banding	Fledging	No. Fledged	Failed date	Notes
Alloway Lake	2/10				0	3/20	
Alloways Creek C	2/10	3/14			0	4/16	New nest location
Alloways Creek E	2/1	3/11		5/29	1		
Alloways Creek F	1/14	2/25		5/22	3		
Assiscunk Creek	T						New pair
Atlantic City	<3/25	4/2		6/18	1		New pair
Audubon	unk				0	3/8	Nest down in storm 3/7
Ballanger Creek West	1/28	3/4		5/20	3		
Bassett's Bridge (Wallkill)	2/24				0	4/27	New nest location
Bayberry- Kindle	2/8	2/25			0	3/8	
Bay Point Road A	2/9	3/22		6/9	3		
Bay Point Road B	2/9	3/22		6/17	2		
Beaver Dam-North	2/15	3/28		6/17	2		New pair
Beaver Dam (osp)	2/2	3/7			0	3/14	
Beaver Dam-West	2/24	3/31		6/17	2		New pair
Beesleys Point	2/9	3/25		6/10	2		
Berrys Creek	2/24	4/2	5/16	6/19	2		
Bidwell (East)	2/10	3/2			0	4/7	
Blairstown	3/3	4/16		7/9	2		
Bogota	2/1	3/11		6/5	1		
Boonton	2/18	3/25		6/4	3		New nest location
Branchburg	2/19	3/24		6/20	2		
Bridgeton	1/24	3/7		5/26	2		
Brielle (Tr. Is.)	1/24			6/18	2		
Bulls Island	2/4	3/10		6/1	2		
Burlington Island	2/16	4/4		6/15	1		
Bustleton Creek	2/18	3/25		6/22	2		New pair
Canoe Brook Reservoir	T						
Canton Drain	3/15	4/12		6/24	1		
Cape May	3/16	4/20		7/21	1		New pair
Carasaljo	3/7	4/13		7/9	1		
Carmel	1/13	2/24		5/18	2		
Cedar Hill (Cumberland)	1/15				0	3/10	
Cedar Lake (Gloucester)	T						
Cedar Swamp Creek	2/9	3/16		6/20	2		
Cedarville Cell	1/9	2/15		5/18	1		
Centerton	2/3	3/14		6/9	2		
Chatsworth	2/4	3/14		7/1	1		

Chatsworth B	2/4	3/14		7/1	1		
Clinton	2/19	3/25		6/17	2		
Cohansey (Greenwich A)	3/6				0	3/18	
Cohansey (Greenwich B)	2/17	3/23		6/8	1		
Cohansey (Hopewell East)	2/2	3/27		6/26	2		
Cohansey (Hopewell West)	2/2	3/27		6/26	1		
Cohansey (Loatman)	2/2	3/27		6/26	2		
Cohansey (Middle Marsh A)	2/17	3/25		6/10	2		
Cohansey (Middle Marsh C)	3/16				0	4/10	
Cohansey (Middle Marsh D)	T						
Cohansey(Middle Marsh E)	3/6	4/9		6/25	2		
Cohansey (Ragged Island)	1/25	3/3		5/19	1		
Cohansey (Tindells Landing)	2/11	3/18		6/3	2		
Cohansey CC A	1/19				0	2/9	
Columbus Tower	1/15	2/19		5/15	2		New pair
Corbin City	2/10	3/14		5/30	2		
Cranbury Neck	2/16	4/8		6/3	1		
Cross Farm	2/13	3/21		6/23	2		New pair
Crosswicks Creek	3/6	4/10		7/1	3		
Culvers Gap	3/7	4/14		7/3	2		
Daretown	2/1	3/11	4/22	5/29	2		
Deepwater-2	2/3	3/10		5/30	2		
Delanco	3/1	4/14		6/17	2		
Dennis Creek 1	2/5	3/21		<7/11	2		
Dennis Creek 2	<3/11				U		
Denville	3/2	4/6		6/26	2		New pair
Devil's Gut	1/31	3/11		5/22	1		
Dias Creek (East)	3/2				U		New nest location
Dingman's Ferry	3/15	4/2		6/20	2		
Dividing Creek A	2/15	3/28		7/2	3		
Dividing Creek B	1/21	3/28		7/2	2		
Duffield Run	<3/24				U		
Duke (Raritan River)	1/17	2/24	4/11	5/18	1		Youngest chick died 3/9/22
Dupont/Raccoon Creek	2/12	3/21		6/5	1		
Eagle Point B	1/6	2/10		5/18	2		
Edgewater	1/3	1/28		4/15	1		New pair
Eagleswood	T						New pair
Edgewater Park	T						
Egg Island	2/7	3/14	4/30	6/4	2		
Elmer	2/10	3/15		6/1	2		
Elsinboro	2/14	3/26		6/16	1		

English Creek	<3/11			U		New nest location; aerial survey 3/11
Fairgrounds	1/22	3/5	5/15	2		·
Far Hills/Ravine Lake	2/11	3/18	6/3	1		
Ferry Road	3/2			0	3/16	
Fishing Creek	?			0	3/21	Aerial survey 3/11
Five Mile Run	2/18	3/25	6/5	1		
Flat Top	1/25	2/28	5/23	1		
Foampak	2/17	3/23	6/8	2		
Forked River	T					
Fortescue	2/15	3/22	6/17	2		
Fortescue C	1/10	2/15	5/18	1		
Fortescue D	2/20	3/26	6/26	1		New pair
Fresh Creek	2/23	3/30		U		New pair
Gibbstown	1/15	2/23	5/20	2		
Great Bay Blvd.	T					
Great Swamp	1/26	3/3		0	3/11	
Green Creek	?			0	3/21	New pair; aerial survey 3/21
Grossup	2/1	3/13	6/5	2		
Gunning River	<4/1			U		New pair
Hack Site	2/20	3/28	6/26	1		
Hackett (Salem)	2/1	3/11	5/29	1		
Hackettstown	2/21	4/3	7/22	2		
Harmony	3/5	4/9	6/28	3		
Hartshorne Woods Park	2/4	3/14		0	4/9	
Heislerville	2/24	4/3	6/17	2		
Higbee	3/3	4/12	7/8	1		
Hyper Humus	T					
Jacobstown	1/6	2/8	5/3	2		
Johnson Park	2/25	4/8		0	4/12	
Keansburg	2/20	3/26	6/16	2		
Kearny	3/6	4/10	6/29	2		
Keasbeys Creek	2/27	3/14	5/18	1		New nest location
Kettle Creek	2/10	3/16	6/17	2		
Kin-Buc	2/6			0	2/13	
Kirkwood Lake	2/5	3/12	6/11	1		
Labar Island	2/16	3/29	6/22	2		
Lake Hopatcong B	2/26	4/9	6/27	2		
Lake Lenape	<3/11			U		Aerial survey 3/11
Lake Mohawk	3/6	4/10	7/1	2		
Lambertville Tower	T					
Linden	2/8	3/19	6/15	1		
Little Swartswood	3/7			0	4/13	

Lockatong Creek	2/27	4/13		6/26	2		New nest location
Long Bridge	1/28	3/15		5/20	2		
Lower Patcong	2/1	4/11		6/1	1		
Maca Rd	T						
Mad Horse Creek	?				U		New nest location
Makepeace	?				U		
Manasquan Reservoir	2/4	3/17		6/10	1		
Manasquan River	2/4	3/15		6/6	2		
Mannington Meadows C	2/14	3/20		6/15	1		
Mantua Creek A	3/2	4/13		6/29	2		
Mantua Creek B	2/4	3/17		6/17	1		
Manville	2/8	3/18		6/16	3		New nest location
Marshalltown	1/28	3/4		5/29	2		
Mattison Reservoir	3/26				0	4/8	New nest location
Matawan Cell	2/18	3/25		6/3	1		New pair
Matts Landing 2	1/20	2/24			0	3/15	Tree fell in windstorm; 1 chick died
Maurice River- Bluffs	2/9	4/3		5/29	1		New nest location; fell 5/8
Maurice River- Burcham	3/1	4/5		6/21	3		
Maurice River- Dorchester	2/9				U		
Maurice River- Millville North	2/11	3/18		6/3	1		
Maurice River- Muddy Run	2/21	3/29		6/17	1		New pair
Maurice River- Peek Preserve	2/2				1		
Maurice River- Somes Drive	2/9				U		
Medford	2/28	3/27	5/13	6/19	1		
Mercer Oaks	T						
Merchantville	3/1	4/10		6/29	1		New nest location
Merrill Creek A	3/8	4/13		6/24	2		New nest location
Merrill Creek B	3/3	4/7		6/23	1		
Mickleton	3/7	3/13		6/4	1		New nest location
Milford	2/20	3/29		6/14	2		
Millhurst	2/26	4/3		7/13	2		
Mond's Island	2/8	3/14		8/2	1		
Money Island	2/15	3/22			0	5/11	
Monksville Reservoir	<4/2	4/6		7/12	1		New pair
Mount Hope Lake	2/21	3/25		7/1	2		
Mt Airy	1/27	3/5	4/16	6/7	2		
Mullica	3/1	3/17		6/5	2		New nest location
Nantuxent Creek A	2/22				0	4/3	
Nantuxent Creek B	2/21	3/7			0	5/2	2 chicks died in nest, unknown cause
Nantuxent Creek D	2/20	3/31		6/26	3		
Navesink B	2/11	3/21		5/23	2		
New Hampton	2/4	3/16		7/1	1		

Newport Meadows B	4/1	5/6		7/29	1		
Newport Meadows C	3/10	3/23		6/24	1		
Newport Meadows D	3/15	3/23		6/24	1		
Newton Reservoir	3/4	4/5		7/21	2		
Nutley	4/9			5/2	0	?	New pair
Oberlin	2/18	4/2		6/20	1		
Oceanville	3/3	4/7		6/22	2		
Old Bridge	2/28				0	5/4	
Oldmans Creek	2/7	3/27		6/11	2		
Oradell Reservoir	T						
Overpeck Creek	2/17	3/26		6/20	1		
Palisades B	2/9	3/21		6/14	2		
Parkers Creek	2/22	3/29		6/22	2		
Parsippany	2/13	3/19		6/4	2		
Parsonage Run	1/16	2/25		5/15	1		
Patcong Creek B	1/21	2/25		6/11	2		
Paterson	3/12	4/20		7/21	2		
Pedricktown	2/17	3/23		6/8	1		New nest location
Pedricktown-cell				6/3	2		New pair
Pemberton	1/7	2/12		5/6	1		
Pennington	1/15	2/19	4/8	5/14	1		
Pennsauken CC	3/1	4/5			0	4/14	New nest location
Penns Grove	2/11	3/25		6/26	1		
Penns Neck A	2/14	3/26			0	5/29	
Penns Neck B (Lower)	2/20	3/30		6/15	2		New nest location
Pilesgrove	1/25	3/4		5/29	2		
Pointers Auburn	2/9	3/20		6/15	2		
Pointers Auburn B	2/9	3/25		6/5	2		
Point View Reservoir	T						
Port Norris	2/6	4/8		6/9	3		
Poxono Island	3/16	4/6		6/28	2		
Princeton	2/19	4/2		6/14	2		
Prospertown	2/11	3/7		5/22	2		
Quinton	2/10	3/14		6/3	2		
Quinton B	2/10	3/14		5/25	2		
Quinton C	2/10	3/21		5/18	1		
Rainbow Lake	2/3	3/22		6/9	1		
Ramblewood	3/16	4/4		6/17	0		New pair
Rancocas Creek	2/16				U		
Rancocas B Tower	3/9	5/1		7/17	1		New pair
Raritan-Keasbey	3/4	4/13		7/8	1		New pair
Readington	2/15	3/21		6/16	1		

Repauno	2/22	3/28		6/22	3		
Riggins Ditch	2/9	2/24		6/17	2		
Rivers Edge	T						
River Barge Park	3/10	4/23		7/1	2		
Roadstown	2/11	4/1		6/4	2		
Robbins Lane	2/5	3/14		6/17	2		
Robbinsville	<3/27	4/14		6/25	1		New pair
Round Valley	3/15	4/4		6/30	2		1
Sadie Lane	2/9	3/11			0	4/3	
Salem River	1/25	3/4		5/22	2		
Sayres Neck A	2/9	3/22	4/30	6/9	2		
Sayres Neck B	2/9	3/22		6/9	1		
Sayres Neck C	3/1	4/4		7/2	2		New pair
School House	3/22				0	4/4	•
Seabrook	2/11	3/20		6/15	2		
Sea Breeze B	2/17	3/25			0	4/16	Nest fell 4/16
SFE Tower A	2/11	3/26		6/15	2		
SFE Tower B	3/1	4/5		6/26	1		New pair
Shark River	2/5	3/15		6/12	3		
Sheepkill Pond	2/20	2/24		6/9	2		New pair
Sheep Pen Creek	3/6				0	3/18	Part of nest fell
Shiloh Tower	1/21				0	3/3	
Silver Lake	1/25	3/1		6/3	1		
South Dennis	<3/11	4/4		6/13	1		
South River-Atlantic	2/27				0	4/11	
Stanton Station	3/1	4/3		6/23	1		
Stillwater (Paulins Kill)	2/3	3/10		6/3	2		New nest location
Stow Creek A (North)	2/11	3/23		6/4	2		
Stow Creek E	2/11	3/23		6/4	2		
Stow Creek F		<4/16		6/24	1		
Stow Creek G	2/19	4/1		6/24	2		
Sunset Lake	1/24				0	3/13	
Supawna Meadows A		<4/8		7/1	1		New nest location
Supawna Meadows B	2/20	4/3		6/15	2		
Swedesboro-Birch Creek	1/28	3/5		5/25	2		
Sylvan Lake Tower	3/15	4/30		7/28	2		
Three Bridges							Not active
Timber Creek	T						
Tocks Island	3/8	4/11		7/5	2		
Toll Bridge	2/14	3/20		6/15	2		
Trenton	2/18	4/26		6/16	2		
Tuckahoe A	<3/11				U		New nest location

Tuckahoe B	<3/11	4/1	5/26	2		New nest location
Turkey Point A	2/22	3/31	6/26	2		
Turkey Point B	1/19			0	3/7	
Turnersville	1/28	3/16	6/8	2		
Upper Greenwood	2/26	4/9	7/3	2		
Upper Millstone	2/8	3/13	6/3	2		
Upper Oldmans	2/20	3/27	7/7	1		Nest blew down in storm; chick grounded. Renested 6/4
Upper Ramapo	3/4	4/21	6/27	2		
Wading River A	T					
Wanaque A	2/24			0	Unk	
Wanaque B	<4/2	4/9	7/2	3		
Wantage	2/8	3/15	6/24	2		
Waretown	3/12	4/19	6/26	2		
Warfle	2/15			0	3/31	
Wawayanda	2/26	4/2	6/16	2		
Whiting	2/24	3/31	7/5	2		
Williamstown				1		New pair
Winslow	~2/15			U		New pair
Woodcliff Lake	3/4	4/23	6/27	2		
Wreck Creek Pond	2/1	3/8	6/12	1		
Yards Creek			~6/29	1		
Total Nests Monitored	267					
<b>Total Nests Active</b>	250					
Total Nests Active & Known Outcome	236					
Territorial Pairs	17					
Successful Nests	197					
Failed Nests	39					
Young Fledged	335					
Nests Active but Unknown Outcome	14					

Table 2. Previously documented eagle nests that were not used, or could not be documented, in 2022.

Alloways D	Hancock B	Seabreeze A
Bacon's Neck	Hansey Creek	Stipson Island Area
Bayside-A	Horicon Lake	Stow Creek B
Bayside-B	Husteds Landing	Stow Creek C
Bear Swamp	Lake Como	Stow Creek D
Belford	Lake Hopatcong A	Tindall Island A
Belleplain East Creek	Mad Horse Island	Tindall Island B
Blue Anchor	Mannington A	Tindall Island C
Bridgeport	Mason Point	TSG
Camden	Matts Landing A	Tuckahoe C
Canton Sheep Farm	MR-Mauricetown	Union Lake
CCIA Cumberland	MR-Millville	Wheaton Island
Cedar Run Ocean	Minisink Island	Woodbury Creek A
Cheesequake	Miry Island	Woodbury Creek B
Hopewell Central	Montague Hollow	
Sheppards Mill	Navesink River	
Cohansey CC B	Newport Meadows A	
Cold Springs	Newport E	
Davis Mill	Oceanport Creek	
Deepwater	Palmyra Cove	
Eagle Point	Pennsville	
East Point	Picatinny Lake	
Edison Tower	Pigeon Swamp	
Egg Harbor	Salem Chestnut	
Hancock A	Salem Nuclear	

# **2022 Season Highlights**

#### **Telemetry**

Endangered and Nongame Species Program biologists, with the Conserve Wildlife Foundation, have attached satellite transmitters on several eagle fledglings over the past six years. These tagged eagles are helping to identify eagle habitat and overnight roost areas by their activity patterns. Depending on funding, we will continue to use satellite tags on NJ eagles to help us understand habitat use and eagle distribution. In 2022 we followed one eagle. EagleTrax mapping shows the movements of all these eagles, and can be found on the Conserve Wildlife Foundation of NJ's website, http://www.conservewildlifenj.org/protecting/eagle-trax/

#### Duke

We have been following "Duke" on NJ EagleTrax, since he fledged from the Duke Farms nest on June 15, 2019. He spent his first winter in the Chesapeake Bay region, and in March and April moved between NJ and PA, a pattern that continued through 2020. His second winter he ranged around Somerset County, often close to his natal site. During 2021 he moved between many of the same locations in MD, PA, and NJ. In his third winter of 2021-22 he ranged in the Somerset-Mercer area of NJ and Bucks Co, PA. His satellite tag did not transmit data 9/11-12/14/22 due to a battery failure, but surprisingly came back on and lasted until mid-April, when it stopped, possibly for good. This appeared to be a battery failure again, with no indication that Duke, himself, isn't still thriving in the wild.

#### Oran

On November 1, 2022 "Oran" was resighted in Stone Harbor, Cape May County, NJ by John Kauterman. He was banded on May 18, 2015, with NJ green band E/17 and outfitted with a transmitter, and named "Oran." After fledging we were able to follow his movements on NJ EagleTrax as he moved around southern New Jersey, Maryland and took a trip up to Maine in 2016. In November 2016 his intact transmitter was found in a harvested corn field in Maryland. At the time we didn't know if he got the harness off or he died in that vicinity. Then on March 24, 2020, Oran was photographed in Port Mahon, Delaware, by Dwayne Ragin. At the time he was five years old and just reached maturity. The resighting in Cape May County in November was additional confirmation that he continues to do well, and, at seven years old, is likely to be in a nesting pair or looking to set up a territory.

#### **Notable Efforts**

For a third year, ENSP ran a "soft release site" in Dividing Creek, where we provided supplemental food (fish and road-killed mammals) to support young eagles separated from their parents, giving them a safe area where other eagles would provide the social learning they need. On July 8, a recent fledgling was found grounded in Neptune. The bird was released at the Dividing Creek site on August 10. Food was left daily for the first two weeks, then every 2-3 days, and trail cameras were used to document eagle use. The released eagle was not documented on trail cams in the following weeks, but two other, unbanded, juvenile eagles were seen. The release site was monitored until the end of August.

#### **Potential Nest Sites**

Biologists and observers actively searched for possible nesting eagles in several locations. The searches were in response to reports of eagles engaging in breeding behaviors. Areas that remain promising are Batsto Lake, Oswego Lake, Indian Mills Lake, Evesham, Flemington/Raritan River, White Lake, Musconetcong River and middle Delaware River, all of which have year-round eagle activity. In addition, several inland reservoirs in the north hold promise for eagle nesting.

## **Resightings of Banded Eagles**

Resightings of NJ green-banded eagles have increased over the years, as have eagles seen in NJ that were banded in other states. In Table 3, we list the eagles resighted in recent years in our state and, in some cases, surrounding states. These resightings, accumulated with the help of many photographers and birders, provide insight into eagle movements during the years between fledging and settling into a territory, as well as adult birds at a nest site.

The list of resightings in Table 3 is ordered by the bird's identifier, primarily the color band code. For some individuals, we have multiple resightings that provide some history and a story of that bird's movements.

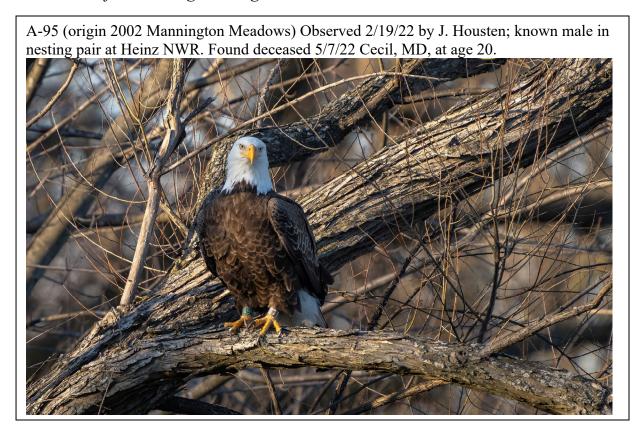
Table 3. Resightings of marked Bald Eagles in New Jersey and elsewhere, 2021-2022.

\* Denotes a band that was resighted in previous years. Band code with a dash (-) has letter-number in line; code with a slash (/) has letter above the number.

	Color Band (green unless	Date			Resight		Band	
Band #	noted)	Resighted	Reporter	Resight Location	State	Band Origin	Date	Comments
0629-45805	A-90*	4/28/22	J. Amende	Bombay Hook	DE	Greenwich	5/10/02	
0629-45810	A-95*	2/19/22	J. Housten	John Heinz NWR	PA	Mannington Meadows	5/13/02	Nesting at Heinz Refuge
0629-45830	B-10*	1/8/22	N. Pullano	Lake Carasalio	NJ	TSBRR	7/15/21	Found injured in Lakewood, banded & released at TSBR, male from Carasaljo pair
0629-45834	B-14	2/1/22	T.S. McGinty	Dividing Creek	NJ	TSBRR	9/23/21	Hit by vehicle on Parkway 9/14/21
0629-45835	B-15	4/22	T. Petrongolo	Upper Oldmans	NJ	TSBRR	12/20/21	Found injured in Mullica Hill; banded and released 12/20/21 Found injured 1/13/22 in
	B-20	10/27	J. Kosowsky	Hamilton	NJ	The Raptor Trust	2/16/22	Woodbridge; banded & released 2/16/22
0709-06556	B-21	4/24/22	M. Seaberg	Gateway Nat. Park	NY	The Raptor Trust	3/27/22	Found injured 2/23/22. Banded & released 3/27 at Lake Solitude
0709-06558	B-23	9/8/22	A. Faatz	Monksville Res.	NJ	The Raptor Trust	8/14/22	Female found injured 5/1/22. Banded & released 8/14 in Wallkill NWR
0679-01733	C/99	10/11/22	B. Griffith	Somers Point	NJ	Chatsworth	5/20/09	Recovered Steuben ME, rehabbed at Avian Wildlife Center, released 10/11/09
0679-01745	D/10*	4/23/22	C. Alber	Wawayanda	NJ	Little Swartswood	5/5/10	Male in Wawayanda pair
0679-01761	D/25*	12/7/22	R. Nicol	Ocean Co.	NJ	Manasquan River	4/20/22	Male
0679-01800	D/61	4/8/22	M. McCann	Evesham Twp.	NJ	Mantua A	5/14/12	
0709-01562	D/72*	2/2/22	R. Nicol	Waretown	NJ	Navesink	5/3/13	Female in Waretown pair
0709-01582	D/92*	12/11/22	R. Nicol	Bamber Lake	NJ	Fort Dix	5/2/14	Female in Whiting pair
0709-01602	E/12	1/16/22	T. Carski	Sassafras River	MD	Little Swartswood	5/8/15	Male
0709-01607	E/17*	11/1/22	J. Kauterman	Stone Harbor	NJ	Egg Island	5/18/15	Male, "Oran," previously with transmitter.
0709-01627	E/37	7/14/22	J. Farrell	Berkeley	MA	Manasquan River	4/25/16	
0709-01644	E/54	12/9/22	B. Allen	Monmouth Co.	NJ	Manasquan River	4/28/17	Male
0709-06501	E/60	1/8/2022	A. Cannizzaro	Waretown	NJ	Manasquan River	4/13/18	Male
0709-06504	E/63*	1/25/22	F. Diblasio	Riverside Sq. Mall, Hackensack	NJ	Galloway	5/1/18	Female
0709-06504	E/63*	1/25/22	D. DeSantis	Hackensack River	NJ	Galloway	5/1/18	Female

1098-02171	E/70	4/27/22	A. Graybill	Hardwick	NJ	The Raptor Trust	10/18/18	Found as HY bird in Monmouth Beach 2018. Banded & released 10/18/18.
0709-06512	E/72	4/5/22	D. Denner	Bristol	PA	Prospertown	4/17/19	
0709-06517	E/77	1/26/22	R. Nicol	Forsythe NWR	NJ	Lower Patcong (osp)	5/13/19	Male
0709-06521	E/81	1/4/22	D. Denner	Tullytown	PA	Princeton	5/16/19	Female
0709-06535	E/95	12/10/22	P. Ferry	Overpeck	NJ	Bogota	6/25/20	Male
1098-03262	E/98	10/7/22	J. Dane	Union Beach	NJ	Dividing Creek Feeding Station	7/23/20	Fledged from Linden nest 2020 and hit by car; treated at TRT, banded & released D.C. 7/23/20.
	D/30 (Blue)	7/15/22	J. Moreno	Paterson	NJ	NY	12/08	Male in Paterson pair
	K/51 (green Fl)	4/2/22	T. Ugaro	Island Beach	NJ	Okahumpka, FL	3/19/22	Chick found on ground 2/26; banded and released back at FL nest 3/19/22
	?/9? Green (right)	1/9/22	Bob Hanson	Ridgefield	NJ			3 <sup>rd</sup> year
	Green (right)	1/25/22	D. DeSantis	Ridgefield Park	NJ			
	Green (left)	2/22/22	D. Freshcoln	Swedesboro	NJ			Subadult
	Green (left)	2/20/22	J. Hackett	Gloucester Landfill	NJ			Adult
	Blue (left)	11/12/22	S. Neumann	Branchburg	NJ			Adult

# Photos of some resighted eagles:











### **Recoveries of Eagles in New Jersey**

During this reporting period, 49 eagles were recovered, and of those, ten were treated and released. The remaining birds were found dead, died while in care, or were euthanized for these reasons: electrocution (8), impacts with vehicles (6), impact trauma (7); eagle-eagle combat (1); raptor attack (1) poisoning (1), lead toxicosis (1); Highly Pathogenic Avian Influenza (HPAI) (2), and unknown circumstances (11) (Table 4). Electrocution is a significant risk for bald eagles everywhere, because power distribution relies on smaller poles where "hot" wires are often positioned less than six feet distant where an eagle's wingspan can result in wire connections. ENSP works with electric suppliers (Atlantic Electric, PSE&G, and JCP&L) to retrofit poles and mark lines where they are high risk, and we use data on eagle nests, roosts, and foraging areas to identify priority sites for those corrections. Among the eagles that died from undetermined cause, disease (like West Nile Virus) and lead exposure could be involved in deteriorated condition.

Table 4. Bald eagles recovered injured or found dead in this project year.

Date	Bald eagles recovered in	<i>y</i>		ľ	
Found	Location Found	Facility	Origin	Age-Sex	Details
12/31/22	Centerton, Cumberland	NJDFW-Tuckahoe		AD-F	Found dead: vehicular impact
1/2/22	Southampton, Burlington	Mercer County		4.5y-M	Died 1/4; possible lead poisoning
1/8/22	Barnegat area, Ocean	Toms River Avian		2-3y	Found injured; euthanized
1/12/22	Old Bridge, Middlesex	Raptor Trust		5y-M	Found injured, released 2/16 at Cheesequake banded B-20
1/14/22	Hopewell Twp, Cumberland	NJDFW-SRO			Electrocution
1/22/22	Upper Deerfield, Cumberland	Tri-State Bird Rescue		AD-F	Euthanized 1/22 due to old trauma
2/8/22	Quinton, Salem	NJDFW-Tuckahoe	Treated and released at TSBR 4/11/14	AD-M	Found dead as a result of eagle combat. Banded 0709-03526, when treated at TSBR in 2014 (hatched 2012).
2/14/22	Salem Co. Landfill	Tri-State Bird Rescue		AD-M	Released 3/8 banded B-16
2/24/22	Ridgefield Park, Bergen	Raptor Trust		AD-M	Released 3/23, banded B-21, lead poisoning via pellets. Blind in 1 eye.
3/6/22	Fairfield, Cumberland	Carcass not recovered		AD	Found in middle of road, carcass gone before able to retrieve
3/8/22	Fairfield, Cumberland	Tri-State Bird Rescue		3y	Died, electrocution
3/15/22	Route 195, Monmouth	NJDFW-CRO		AD	Vehicular impact; died in transport
3/21/22	Hammonton, Atlantic	NJDFW-SRO			
4/3/22	Fairfield Twp, Cumberland	NJDFW-SRO Avian Wildlife		НҮ	Electrocution
4/3/22	Wallkill River, NWR, Sussex	Center/Raptor Trust		HY-M	Treated for lead poisoning: released 4/21; banded B-22
4/17/22	Reeves Rd, Cumberland	Tri-State Bird Rescue		AD-M	Vehicular impact; euth due to injuries
4/24/22	Deptford, Gloucester	Tri-State Bird Rescue		AD	Vehicular impact; euth due to injuries
4/23/22	Hardyston Twp, Sussex	NJDFW-NRO		AD	Electrocution
5/1/22	West Milford, Sussex	Avian Wildlife Center/Raptor Trust		AD-F	Released 8/14, banded B-23
5/6/22	Columbus, Burlington	Mercer County Wildlife	Mantua 2012	AD-M	Band D/62; released 9/10
5/7/22	Cecil, Maryland	MD-DNR	Mannington B, 2002	AD-M	Unknown; found dead on shore

5/13/22	Quinton-Marlboro Rd, Salem	Tri-State Bird Rescue		AD	Electrocution
5/15/22	Mays Landing, Atlantic	NJDFW-Tuckahoe		HY	Electrocution
5/24/22	Salem Co. Landfill	Tri-State Bird Rescue		2y-M	Died in 24hrs; poisoning
5/26/22	Sayres Neck, Cumberland	Tri-State Bird Rescue		2y-F	Injured from raptor attack
6/2/22	Williamstown, Gloucester	NJDFW-SRO	Nantuxent A- 2013	AD-M	Unknown
6/3/22	Pilesgrove, Salem	Tri-State Bird Rescue	Upper Oldmans 2022	HY-F	Nestling grounded when nest fell; renested on site.
6/3/22	Alloways, Salem	Tri-State Bird Rescue		2yr	Euth due injury
7/7/22	Blakeslee, PA	UPenn	Banded at TSBR 3/8/2022	AD-M	B/16; cause of death of unknown
7/8/22	Neptune, Monmouth	Toms River Avian		HY-F	Released 8/10, banded H-34
7/27/22	Mannington Twp, Salem	Tri-State Bird Rescue		HY	Euth due to injury; vehicular impact
7/29/22	Keansburg, Monmouth	Toms River Avian		HY	Euth due to injury; impact trauma
7/29/22	Pitman, Gloucester	Tri-State Bird Rescue		AD	Euth due to wing fracture
8/24/22	Woodbine, Cape May	Tri-State Bird Rescue		AD	Euth; impact trauma
9/13/22	Trellis Lane, Gloucester	Tri-State Bird Rescue		AD-F	Injured; died in transport
10/22	Salem Co. Landfill	USFWS			Tested positive for HPAI
10/24/22	Newfield, Gloucester	Tri-State Bird Rescue		AD	Euth due to wing fracture
10/25/22	Harmony, Warren	Raptor Trust		AD-M	Injured in eagle combat, treated, banded B-24, and released 12/1/22.
10/25/22	Hammonton, Atlantic	NJDFW-SRO		AD	Found dead
10/26/22	Frenchtown, Hunterdon	Mercer Co. Wildlife		4yr-F	Electrocution
11/3/22	Atlantic Co.	Tri-State Bird Rescue			
11/4/22	Hunterdon Co	Raptor Trust		AD-F	Euth due to spinal injury
11/5/22	Stow Creek, Cumberland	NJDFW-SRO		AD	Recovered injured; died overnight
11/18/22	Millville, Cumberland	Tri-State		AD	Euth due to injuries
11/22/22	Millville, Cumberland	USFWS		AD	Found dead; tested positive HPAI
11/27/22	Raritan Twp, Hunterdon	Mercer Co. Wildlife	Originally found injured Nassau Co, NY.	AD-M	Found dead from train impact. Banded at Raptor Trust 11/6/22 after treatment July-Nov 2022.
12/15/22	Salem Co.	Tri-State Bird Rescue		Juv-F	Hit by vehicle; released 12/19; banded B-17
14/13/44	Hopewell Twp.	111-State Diffu Rescue		Juv-1	oanded D-17
12/27/22	Cumberland	NJDFW-SRO		Imm	Found under electric pole
12/28/22	Stow Creek, Cumberland	NJDFW-SRO		AD	Found dead

Our sincere thanks to everyone who pitched in to help rescue, transport, and treat eagles!

Those interested in helping, please look for the new Raptor Alliance group! Organization and training will continue in 2023. Follow at <a href="https://www.NJRaptors.org">www.NJRaptors.org</a>.

#### Acknowledgments

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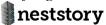
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